

Amendments to the Claims:

1. (AMENDED) A vehicle-based programmable appliance control system comprising:

a vehicle-based data communication bus running throughout at least a portion of a vehicle;

at least one user activation input fixedly installed within the vehicle interior and connectedly wired connected by a first bus interface to the communication bus, wherein the first bus interface is connectedly wired to the communication bus;

a radio frequency transmitter fixedly installed to the vehicle and remotely located from the at least one user activation input and ~~connected~~ connectedly wired by a second bus interface to the communication bus, wherein the second bus interface is connectedly wired to the communication bus; and

control logic fixedly installed to the vehicle and connectedly wired connected by a third bus interface to the communication bus, wherein the third bus interface is connectedly wired to the communication bus;

wherein upon being asserted the at least one user activation input provides an activation input signal to the communication bus via the wired connection between the at least one user activation input and the communication bus for receipt by the control logic;

wherein the control logic receives the activation input signal from the communication bus via the wired connection between the control logic and the communication bus, generates control signals corresponding to the activation input signal, and provides the control signals to the communication bus via the wired connection between the control logic and the communication bus for receipt by the transmitter;

wherein the transmitter receives the control signals from the communication bus via the wired connection between the transmitter and the communication bus, generates a radio frequency appliance activation signal in accordance with the control signals, and wirelessly transmits the appliance activation signal for receipt by an appliance.

2. (ORIGINAL) The system of claim 1 further comprising at least one user indicator remotely located from the transmitter the control logic further operative to activate the user indicator over the data communication bus.

3. (ORIGINAL) The system of claim 2 wherein the user indicator is at least one indicator lamp.

4. (ORIGINAL) The system of claim 2 wherein the user indicator is a graphical display.

5. (ORIGINAL) The system of claim 2 wherein the user indicator generates an audible sound.

6. (ORIGINAL) The system of claim 1 wherein the at least one activation input comprises a plurality of switches.

7. (ORIGINAL) The system of claim 1 wherein the at least one activation input comprises a voice recognizer.

8. (ORIGINAL) The system of claim 1 wherein the at least one activation input comprises at least one display control.

9. (ORIGINAL) The system of claim 1 further comprising a memory in communication with the control logic, the memory holding a plurality of activation schemes, each activation scheme providing characteristics for generating at least one appliance activation signal.

10. (ORIGINAL) The system of claim 9 further comprising a data port in communication with the control logic over the data communication bus, the control logic operative to receive data from the data port modifying the plurality of activation schemes.

11. (AMENDED) A method of activating a remotely controlled appliance comprising:

generating an activation input signal at an activation input fixedly installed located in a vehicle interior and connected connectedly wired to a vehicle-based communication bus running throughout the vehicle upon assertion of the activation input by a user;

transmitting the activation input signal from the activation input to the communication bus via the wired connection between the activation input and through the communication bus;

receiving, by a transmitter fixedly installed to the vehicle and remotely located from the activation input and connectedly wired to the communication bus, the activation input signal from the communication bus at a location in the vehicle remote from the activation input via the wired connection between the transmitter and the communication bus; and

wirelessly transmitting, by the transmitter, a radio frequency activation signal based on the received activation input signal from a location in the vehicle remote from the activation input for receipt by a remotely controlled appliance.

12. (AMENDED) A method of programming a vehicle-based remote control, the remote control operative to transmit at least one activation signal for activating a remotely controlled appliance, the method comprising:

generating at least one programming signal at a programming input fixedly installed located in a vehicle interior and connected connectedly wired to a vehicle-based communication bus running throughout the vehicle upon assertion of the programming input by a user, the at least one programming signal specifying at least one of a plurality of activation signal characteristics;

transmitting the at least one programming signal from the programming input to the communication bus via the wired connection between the programming input and through the communication bus;

receiving, by a transmitter fixedly installed to the vehicle and remotely located from the programming input and connectedly wired to the communication bus, the at least one programming signal from the communication bus at a location in the vehicle remote from the

programming input via the wired connection between the transmitter and the communication bus; and

wirelessly transmitting, by the transmitter, a radio frequency activation signal based on the received at least one programming signal from a location in the vehicle remote, from the programming input for receipt by a remotely controlled appliance.

13. (ORIGINAL) The method of claim 12 wherein the at least one programming input comprises a fixed code value.

14. (ORIGINAL) The method of claim 12 wherein the at least one programming input comprises a selection of one of a plurality of activation transmission schemes.

15. (ORIGINAL) The method of claim 12 wherein the at least one programming input comprises an indication of whether the remotely controlled appliance is responsive to a fixed code activation signal or to a rolling code activation signal.

16. (AMENDED) A vehicle-based remote garage door opener comprising a vehicle-based bus running throughout at least a portion of an automotive vehicle;

at least one user input device ~~in communication with~~ fixedly installed within the vehicle interior and connectedly wired to the vehicle-based bus;

a radio frequency transmitter ~~in communication with~~ fixedly installed to the vehicle and connectedly wired to the vehicle-based bus and operative to transmit at least one of a plurality of different activation signals; and

control logic ~~in communication with~~ fixedly installed to the vehicle and connectedly wired to the vehicle-based bus, the control logic remotely located from the at least one user input device, the control logic commanding the transmitter over the vehicle-based bus via the wired connection between the control logic, the vehicle-based bus, and the transmitter to wirelessly transmit, for receipt by a remote garage door opener, at least one activation signal

based on input received by the control logic over the vehicle-based bus from the at least one user input device via the wired connection between the at least one user input device, the vehicle-based bus, and the control logic.

17. (ORIGINAL) The vehicle-based remote garage door opener of claim 16 wherein the at least one user input device is a plurality of switches, each of which provides an activation input.

18. (ORIGINAL) The vehicle-based remote garage door opener of claim 16 wherein the control logic receives a fixed code value from the at least one user input device.

19. (ORIGINAL) The vehicle-based remote garage door opener of claim 16 wherein the control logic receives a selection signal from the at least one user input device, the selection signal selecting at least one of a plurality of possible activation signal transmission schemes.

20. (ORIGINAL) The vehicle-based remote garage door opener of claim 19 wherein the control logic receive the selection signal in response to at least one test activation signal sent by the transmitter.

21. (ORIGINAL) The vehicle-based remote garage door opener of claim 16 further comprising a memory storing a plurality of activation signal transmission schemes.

22. (ORIGINAL) The vehicle-based remote garage door opener of claim 21 further comprising a data port in communication with the vehicle-based bus, the data port receiving changes to the plurality of activation signal transmission schemes and forwarding the received changes to the memory.

23. (ORIGINAL) The vehicle-based remote garage door opener of claim 16 further comprising at least one user output device in communication with the vehicle-based bus.

24. (AMENDED) A programmable control for an appliance, the appliance responding to one of a plurality of transmission schemes, the programmable control comprising:

a serial data communication bus running throughout at least a portion of a vehicle;

a transmitter fixedly installed to the vehicle and connectedly wired to the communication bus and operative to transmit a radio frequency activation signal based on any of the plurality of transmission schemes;

a user programming input fixedly installed within the vehicle interior and connectedly wired to the communication bus and remotely located from the transmitter; and

control logic fixedly installed to the vehicle and connectedly wired to the communication bus and in communication with the user programming input through the serial data wired connection between the control logic, the communication bus, and the user programming unit, the control logic implementing a rolling code programming mode, a fixed code programming mode and an operating mode, the control logic in rolling code programming mode generating and transmitting a sequence of rolling code activation signals until user input indicates a successful rolling code transmission scheme, the control logic in fixed code programming mode receiving a fixed code from the user programming input then generating and transmitting a sequence of fixed code activation signals until user input indicates a successful fixed code transmission scheme.

25. (AMENDED) A programmable control for an appliance, the appliance responding to one of a plurality of transmission schemes, the programmable control comprising:

a serial data communication bus running throughout a vehicle;

a transmitter fixedly installed to the vehicle and connectedly wired to in communication with the communication bus and operative to transmit a radio frequency activation signal;

a programming input fixedly installed within the vehicle interior and connectedly wired to in communication with the communication bus and remotely located from the transmitter;

memory in communication with the communication bus and holding data describing a plurality of rolling code transmission schemes associated with a rolling code mode and a plurality of fixed code transmission schemes, at least one fixed code transmission scheme associated with each of at least one fixed code mode; and

control logic fixedly installed to the vehicle and connectedly wired to in communication with the communication bus, for each of at least one channel the control logic maintaining a channel mode set initially to the rolling code mode, the channel mode changing to one of the at least one fixed code mode if the channel is trained to a fixed code received by the control logic over the communication bus from the programming input.

26. (AMENDED) A programmable control for an appliance, the appliance responding to one of a plurality of transmission schemes, the programmable control comprising:

a serial data communication bus running throughout a vehicle;

a transmitter fixedly installed to the vehicle and connectedly wired to in communication with the serial data communication bus and operative to transmit a radio frequency activation signal;

a plurality of activation inputs fixedly installed within the vehicle interior and connectedly wired to in communication with the serial data communication bus and remotely located from the transmitter, each activation input generating an activation signal when asserted;

memory in communication with the ~~serial data~~ communication bus and holding data describing each of the plurality of transmission schemes; and

control logic fixedly installed to the vehicle and connectedly wired to in
~~communication with~~ the communication bus, the control logic programmed to associate each
of the plurality of activation inputs with at least one of the plurality of transmissions schemes,
the control logic generating and transmitting an activation signal based on each of the at least
one associated transmission scheme in response to receiving an activation signal from an
asserted activation input over the ~~serial data~~ communication bus via the wired connection
between the control logic, the communication bus, and the asserted activation input.